

Contents

	Page
List of Figures.....	vi
List of Tables.....	vi
Acronyms	vii
Glossary	G-1
1.0 INTRODUCTION.....	1-1
1.1 SCOPE OF PROJECT	1-4
1.2 PURPOSE AND NEED	1-4
1.2.1 Federal Agency Purpose and Need.....	1-5
1.2.2 Applicant's Purpose and Need.....	1-5
1.3 OTHER AGENCY ACTIONS	1-6
1.3.1 U.S. Army Corps of Engineers.....	1-6
1.3.2 International Boundary and Water Commission	1-6
1.3.3 Public Utility Commission of Texas	1-7
1.3.4 Texas Historical Commission.....	1-7
1.3.5 U.S. Fish and Wildlife Service.....	1-7
1.3.6 Texas Parks and Wildlife Department.....	1-7
2.0 PROPOSED ACTION AND ALTERNATIVES.....	2-1
2.1 NO ACTION ALTERNATIVE.....	2-1
2.2 APPLICANT'S PREFERRED ALTERNATIVE (PROPOSED ACTION)	2-4
2.2.1 Structure Alternatives.....	2-4
2.2.2 Transmission Line Design.....	2-4
2.2.3 Converter Station	2-6
2.2.4 Construction Procedures.....	2-6
2.2.5 Maintenance.....	2-7
2.3 ALTERNATIVE ROUTE (ROUTE B).....	2-7
2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS.....	2-7
3.0 AFFECTED ENVIRONMENT.....	3-1
3.1 PHYSIOGRAPHY, GEOLOGY, AIR QUALITY.....	3-1
3.2 WATER RESOURCES.....	3-3
3.2.1 Surface Water	3-3
3.2.2 Wetlands/Jurisdictional Waters of the U.S.....	3-4
3.2.3 Groundwater.....	3-5
3.3 SOILS.....	3-5
3.3.1 Soil Associations	3-5
3.3.2 Prime Farmland.....	3-5
3.4 VEGETATION	3-6
3.4.1 Regional Vegetation.....	3-6

	Page
3.4.2 Vegetation Community Types in the Study Area	3-8
3.4.3 Important Species	3-8
3.4.4 Ecologically Sensitive Areas	3-12
3.5 WILDLIFE	3-12
3.5.1 Wildlife Habitats and Species.....	3-14
3.5.1.1 Amphibians.....	3-14
3.5.1.2 Reptiles.....	3-14
3.5.1.3 Birds.....	3-14
3.5.1.4 Mammals	3-16
3.5.2 Important Species	3-16
3.5.2.1 Recreationally and Commercially Important Species.....	3-16
3.5.2.2 Endangered and Threatened Species.....	3-16
3.5.2.3 Critical Habitat	3-29
3.6 AQUATIC ECOLOGY.....	3-29
3.6.1 Aquatic Habitats and Species	3-29
3.6.2 Important Species	3-31
3.6.2.1 Recreationally and Commercially Important Species.....	3-31
3.6.2.2 Endangered and Threatened Species.....	3-31
3.7 SOCIOECONOMICS.....	3-32
3.7.1 Regional Social and Economic Characteristics	3-32
3.7.1.1 Population Trends	3-32
3.7.1.2 Environmental Justice	3-32
3.7.1.3 Economic Trends.....	3-37
3.7.1.4 Leading Economic Sectors.....	3-37
3.7.1.5 Agriculture.....	3-40
3.8 LAND USE, AESTHETICS AND RECREATION	3-40
3.8.1 Land Use	3-40
3.8.2 Aesthetics.....	3-41
3.8.3 Recreation	3-42
3.8.4 Aviation/Transportation	3-43
3.9 CULTURAL RESOURCES	3-44
3.9.1 Cultural Setting.....	3-44
3.9.1.1 Archaeological Developments	3-44
3.9.1.2 Historical Developments	3-47
3.9.2 Results of the Literature/Records Review.....	3-49
3.9.3 Archaeological Investigations.....	3-51
4.0 ENVIRONMENTAL IMPACTS.....	4-1
4.1 IMPACTS ON PHYSIOGRAPHY/GEOLOGY/AIR QUALITY/SOILS	4-1
4.1.1 No Action Alternative.....	4-1
4.1.2 Applicant's Preferred Alternative (Route A)	4-1
4.1.3 Route B	4-2
4.2 IMPACTS ON WATER RESOURCES.....	4-2
4.2.1 Surface Water	4-2

	Page
4.2.1.1 No Action Alternative	4-3
4.2.1.2 Applicant's Preferred Alternative (Route A).....	4-3
4.2.1.3 Route B.....	4-3
4.2.2 Groundwater.....	4-3
4.2.3 Floodplain/Wetland Assessment.....	4-4
4.2.3.1 Project Description	4-4
4.2.3.2 Floodplain/Wetlands Effects	4-4
4.2.3.3 Alternatives	4-4
4.3 IMPACTS ON TERRESTRIAL ECOSYSTEMS.....	4-4
4.3.1 Vegetation	4-4
4.3.1.1 No Action Alternative	4-5
4.3.1.2 Applicant's Preferred Alternative (Route A).....	4-5
4.3.1.3 Route B.....	4-5
4.3.2 Endangered and Threatened Plant Species	4-5
4.3.3 Wildlife.....	4-6
4.3.3.1 No Action Alternative	4-8
4.3.3.2 Applicant's Preferred Alternative (Route A).....	4-8
4.3.3.3 Route B.....	4-9
4.3.4 Endangered and Threatened Wildlife.....	4-9
4.3.5 Critical Habitat.....	4-10
4.4 IMPACTS ON AQUATIC ECOSYSTEMS.....	4-10
4.4.1 No Action Alternative.....	4-11
4.4.2 Applicant's Preferred Alternative (Route A)	4-11
4.4.3 Route B	4-11
4.5 SOCIOECONOMIC IMPACTS.....	4-11
4.5.1 Socioeconomic Effects	4-11
4.5.2 No Action Alternative.....	4-12
4.5.3 Environmental Justice Evaluation	4-12
4.6 IMPACTS ON LAND USE, AESTHETICS AND RECREATION.....	4-13
4.6.1 Land Use	4-13
4.6.1.1 No Action Alternative	4-14
4.6.1.2 Applicant's Preferred Alternative (Route A).....	4-14
4.6.1.3 Route B	4-14
4.6.2 Aesthetics.....	4-14
4.6.2.1 No Action Alternative	4-15
4.6.2.2 Applicant's Preferred Alternative (Route A).....	4-15
4.6.2.3 Route B	4-15
4.6.3 Recreation.....	4-16
4.6.3.1 No Action Alternative	4-16
4.6.3.2 Applicant's Preferred Alternative (Route A).....	4-16
4.6.3.3 Route B	4-16
4.6.4 Aviation/Transportation	4-16
4.6.4.1 No Action Alternative	4-16
4.6.4.2 Applicant's Preferred Alternative (Route A).....	4-16

	Page
4.6.4.3 Route B.....	4-17
4.7 IMPACTS ON CULTURAL RESOURCES.....	4-18
4.7.1 Archaeological Impact Assessment	4-18
4.7.1.1 No Action Alternative.....	4-19
4.7.1.2 Applicant's Preferred Alternative (Route A).....	4-19
4.7.1.3 Route B.....	4-19
4.7.2 Historical/Non-Archaeological Resource Impacts.....	4-19
4.7.2.1 No Action Alternative.....	4-20
4.7.2.2 Applicant's Preferred Alternative (Route A).....	4-20
4.7.3 Summary of Cultural Resources Impacts Analysis	4-21
4.7.4 Mitigation (All Alternative Routes)	4-22
4.8 ELECTRIC AND MAGNETIC FIELDS	4-22
4.9 TRANSBOUNDARY IMPACTS.....	4-24
4.10 MITIGATION	4-25
5.0 CUMULATIVE IMPACTS.....	5-1
6.0 AGENCIES AND PERSONS CONSULTED.....	6-1
7.0 REFERENCES.....	7-1
GLOSSARY	G-1

Appendices

- A Agency Correspondence
- B Cultural Resources Report

Figures

	Page
1-1 Project Location	1-2
1-2 Study Area Location	1-3
2-1 Preliminary Alternative Routes	2-2
2-2 Primary Alternative Routes	2-3
2-3 Primary Alternative Routes and Environmental/Land Use Constraints.....	map pocket
2-4 Applicant's Preferred Alternative (Route A) and Alternate (Route B).....	map pocket
2-5 Typical Single-Circuit, 138-kV Single-Pole Tangent Structure.....	2-5
3-1 Location of Hidalgo County in Relation to the Physiographic Provinces of Texas.....	3-2
3-2 Location of Hidalgo County in Relation to the Vegetational Regions of Texas.....	3-7
3-3 Location of Hidalgo County in Relation to the Biotic Provinces of Texas.....	3-13
3-4 Census Tracts Within the Study Area.....	3-35
3-5 Civilian Labor Force and Unemployment Rate.....	3-38
3-6 Covered Employment and Major Employment Sectors.....	3-39
3-7 Location of Hidalgo County in Relation to the Cultural Resources Planning Regions	3-45

Tables

	Page
3-1 Endangered, Threatened, or Rare Plant Species of Potential Occurrence In Hidalgo County	3-10
3-2 Migratory Non-Game Birds of Conservation Concern, Tamaulipan Brushlands Region.....	3-17
3-3 Endangered, Threatened and Rare Wildlife Species of Potential Occurrence in Hidalgo County, Texas	3-18
3-4 Population Trends and Projections.....	3-33
3-5 Ethnic Minority and Poverty Distributions	3-36
4-1 Summary of Alternatives Impacts.....	4-27